REMARKS

I. INTRODUCTORY REMARKS

Applicants have carefully reviewed the contents of the Office Action dated September 25, 2009. Reconsideration and allowance of the subject application in view of the foregoing amendments and the following remarks is respectfully requested. By entry of this Amendment, claims 10, 12-14, and 18 are currently amended and claim 22 is newly added. To the best knowledge of the undersigned, no new matter has been added. Claims 11 and 19-21 are newly canceled. Accordingly, claims 10, 12-18, and 22 are currently pending.

II. CLAIM REJECTIONS UNDER 35 U.S.C § 112

On page 2, the Office Action rejects claims 11 and 13 for being indefinite because it is unclear if "preferably" is meant to limit the claims. Applicants respectfully submit that claim 11 has been canceled and claim 13 has been amended and the phrase "preferably" has been deleted. Thus, Applicants respectfully request the rejections be withdrawn.

III. CLAIM REJECTIONS UNDER 35 U.S.C § 103

On pages 3-4 of the Office Action, claims 10, 12, and 15-17 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,750,207 to Hammond et al. (hereinafter "Hammond") in view of European Patent Application No. EP 1 081 247 A2 to Okazaki et al. (hereinafter "Okazaki"). The rejection is traversed in view of the following.

Hammond and Okazaki, alone or in combination, fail to teach or suggest a "second receiving device is designed for receiving several cathodes such that the cathodes are approximately cylindrical in shape and are arranged substantially horizontally and substantially one on top of the other such that the cathodes protrude into the vacuum chamber," as recited in amended claim 10. The Office Action states that Hammond fails to teach or suggest "cathodes are…arranged substantially horizontally and substantially one on top of the other such that the cathodes protrude into the vacuum chamber," as recited in amended claim 10. Applicants respectfully agree.

To overcome the deficiencies of Hammond, the Office Action relies on Okazaki. According to Okazaki, an arc type ion plating apparatus for coating substrates in a vacuum chamber (20 in Fig. 1 and 2) is provided (see Abstract on page 1). The apparatus has a substrate holder (26 in Fig. 1 and 2) for holding the substrates (24 in Fig. 1 and 2) to be coated, said holder being provided in the vacuum chamber. The apparatus in accordance with Okazaki comprises a plurality of arc evaporation sources (42 in Fig. 1 and 2) having cathodes (46 in Fig. 1 and 2).

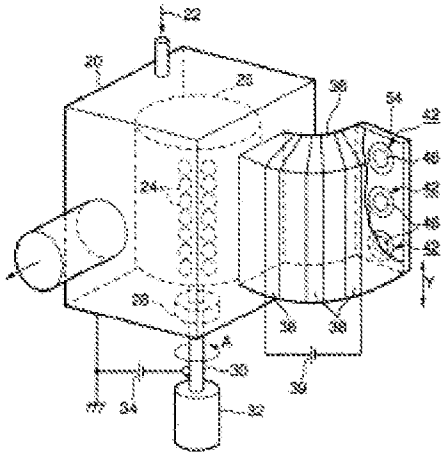

Figure 1 of Okazaki

The Office Action aligns the claimed "second receiving device is designed for receiving several cathodes such that the cathodes are approximately cylindrical in shape and are arranged substantially horizontally and substantially one on top of the other such that the cathodes protrude into the vacuum chamber," with the cathodes of Okazaki. The Office Action asserts that the motivation for utilizing the features of Okazaki is that it allows for forming a film in a large area. However, Okazaki does not overcome the deficiencies of Hammond for at least the following three reasons.

First, Okazaki *teaches away* from cathodes arranged to "protrude into the vacuum chamber," as recited in amended claim 10. Under *Graham v. John Deere*, teaching way is an objective indicia of non-obviousness. Okazaki teaches that the cathodes (46) should **not** protrude into the vacuum chamber (20), in contrast to amended claim 10. The goal of Okazaki's apparatus is to prevent "bulky particles" which are evaporated from the cathodes from entering the vacuum chamber. Okazaki, paragraphs [0017] and [0041]. To achieve this goal, Okazaki separates the cathodes (46) from the vacuum chamber (20) by a curved transport tube (36) such that any "bulky particles" from the cathodes will collide with the inner wall of the transport tube (36) instead of entering the vacuum chamber (20). Okazaki, paragraphs [0017] and [0041]. Okazaki's apparatus is described in further detail below.

Okazaki's apparatus comprises a transport tube (36 in Fig. 1 and 2), one end portion connected to an aperture portion (21 in Fig. 2) of the wall of the vacuum chamber, and the evaporation sources being disposed on the other end portion of the transport portion (see Okazaki, claim 1 and paragraphs [0026] and [0029]). Thus, the cathodes (46) are arranged at that end portion of the transport tube which is distant from the vacuum chamber (20). In addition, the transport tube is a bent tube (see Okazaki, claim 1 and Fig. 1 and 2). Furthermore, the cathodes are flat disks whose thickness is much smaller than the length of the transport tube 26 (said length being the distance between said end portions of the tube).

In accordance with Okazaki, the material which is evaporated from the cathodes is guided by means of an magnetic field along the transport tube (from the distant end of the tube towards the aperture portion (21) in the wall of the vacuum chamber). In particular, an angle α (Fig. 2) with which the transport tube is bent is set so that the substrates on said substrate holder (26 in Fig. 1) are not seen in a straight line from evaporation surfaces of said cathodes, i.e. the angle α is set in a range from 45° to 120° (Okazaki, claims 6 and 7). The shape of the transport tube and the magnetic field ensure that certain "bulky particles" which are evaporated from the cathodes cannot enter the vacuum chamber and cannot reach the substrates, but collide with the inner wall of the transport tube (36) and adhere thereto (Okazaki, paragraphs [0017] and [0041]). These measures are essential for the solution to the technical problem being addressed by Okazaki.

Thus, Okazaki specifically teaches that the cathodes must not protrude into the vacuum chamber, directly against the claimed cathodes arranged to "protrude into the vacuum chamber" as recited in amended claim 10.

Second, it is not possible to replace the cathodes of the apparatus in accordance with Okazaki by cathodes which are approximately cylindrical in shape and are arranged substantially horizontally such that the cathodes protrude into the vacuum chamber. Since the transport tube (36) in accordance with Okazaki is bent as specified above, a cylindrical tube which is arranged at that end portion of transport tube which is distant from the vacuum chamber (20) must adjoin the inner wall of the transport tube if the extension of the cylindrical cathode in its longitudinal direction

exceeds a certain limit. Thus, for geometrical reasons, a cylindrical cathode does not fit in a transport tube in accordance with Okazaki such that it protrudes into the vacuum chamber.

Third, ignoring that Okazaki teaches away from the claimed recitation, there is additionally no motivation for combining the cathodes of Okazaki with Hammond. The cathodes (46) in accordance with Okazaki evaporate material ("large area plasma 50" in Fig. 2) to be deposited on substrates in a direction which is parallel to a horizontal plane. This is indicated in Fig. 2 (the direction of movement of plasma 50 is indicated in Fig. 2 by means of dashed lines). Therefore, the cathodes (46) behave like planar cathodes which are vertically arranged. Hammond already includes vertically arranged cathodes. Thus, there is no motivation to combine the cathodes of Okazaki with Hammond.

Accordingly, Hammond and Okazaki, alone or in combination, do no reasonably teach or suggest "second receiving device is designed for receiving several cathodes such that the cathodes are approximately cylindrical in shape and are arranged substantially horizontally and substantially one on top of the other such that the cathodes protrude into the vacuum chamber," as recited in amended claim 10. Thus, Applicants respectfully request reconsideration and withdrawal of the rejection.

Claims 12 and 15-17 depend from claim 10 and are allowable over Hammond and Okazaki for at least the foregoing reasons that claim 10 is allowable. Thus, Applicants respectfully request reconsideration and withdrawal of the rejection.

On pages 4-5 of the Office Action, claims 13 and 14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hammond in view of Okazaki and further in view of PCT International Publication Number WO 02/50864 A1 to Holubar et al. (hereinafter "Holubar"). The rejection is traversed in view of the following. Claims 13 and 14 depend from claim 10, which as demonstrated above, is patentable over Hammond and Okazaki. Holubar does not remedy the deficiencies of Hammond and Okazaki. Accordingly, claims 13 and 14 are patentable over any reasonable

combination of Hammond, Okazaki, and Holubar. Thus, Applicants respectfully request reconsideration and withdrawal of the rejections.

On pages 5-6 of the Office Action, claim 18 was rejected under 35 U.S.C. §103(a) as being unpatentable over Hammond in view of Okazaki and further in view of U.S. Patent No. 4,877,505 to Bergmann (hereinafter "Bergmann"). The rejection is traversed in view of the following. Claim 18 depends from claim 10, which as demonstrated above, is patentable over Hammond and Okazaki. Bergmann does not remedy the deficiencies of Hammond and Okazaki. Accordingly, claim 18 is patentable over any reasonable combination of Hammond, Okazaki, and Bergmann. Thus, Applicants respectfully request reconsideration and withdrawal of the rejections.

On pages 6-7 of the Office Action, claims 11 and 19-22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hammond in view of Holubar. The rejection is traversed in view of the following. Claims 11 and 19-22 have been canceled, rendering the rejection moot. Thus, Applicants respectfully request reconsideration and withdrawal of the rejections.

IV. CONCLUSION

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants, therefore, respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

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